

1           1.     A system for connecting multiple home-networked client devices to a host  
2           system, wherein the host system assigns independent Internet addresses to the home-  
3           networked client devices, the system comprising:

4           a home gateway device which includes a communication device to communicate with  
5           the host system over a single communication tunnel established between the home gateway  
6           device and the host system, wherein the home gateway device includes a network address  
7           translation module; and

8           multiple home-networked client devices connected to the home gateway device via a  
9           network and that communicate with the host system through the home gateway device over  
10          the single communication tunnel,

11          wherein the system is configured to enable the host system to establish individual  
12          communication sessions with the multiple home-networked client devices over the single  
13          communication tunnel and to assign independent Internet addresses to the multiple home-  
14          networked client devices.

1           2.     The system of claim 1 wherein the home gateway device is physically located  
2           in a personal residence.

1           3.     The system of claim 2 wherein the personal residence is a single family  
2           dwelling.

1           4.     The system of claim 1 wherein the home gateway device and the home-  
2           networked client devices are physically located in a personal residence.

1           5.     The system of claim 4 wherein the personal residence is a single family  
2           dwelling.

1           6.     The system of claim 2 wherein the home-networked client devices include  
2           wireless client devices that are connected to the home gateway device via a wireless network.

1           7.     The system of claim 6 wherein the wireless client devices operate outside of  
2           the personal residence.

1           8.     The system of claim 1 wherein the home-networked client devices establish  
2 simultaneous individual communication sessions with the host system over the single  
3 communication tunnel and each home-networked client device is assigned an independent  
4 Internet address by the host system.

1           9.     The system of claim 1 wherein the host system includes an Internet Service  
2 Provider.

1           10.    The system of claim 1 wherein the network address translation module  
2 includes a port-based network address translation module.

1           11.    The system of claim 1 wherein the network address translation module  
2 includes an address-based network address translation module.

1           12.    The system of claim 1 wherein the home gateway device communicates with  
2 the multiple home-networked client devices using a first protocol and communicates with the  
3 host system using a second protocol.

1           13.    The system of claim 12 wherein the first protocol and the second protocol are  
2 the same.

1           14.    The system of claim 12 wherein the second protocol differs from the first  
2 protocol.

1           15.    The system of claim 12 wherein:  
2 the first protocol is TCP/IP; and  
3 the second protocol is L2TP.

1           16.    The system of claim 15 wherein the home gateway device includes:  
2 a network address translation module; and  
3 an L2TP access concentrator.

1           17.    The system of claim 16 wherein the network address translation module  
2 includes a port-based network address translation module.

1           18.     The system of claim 16 wherein the network address translation module  
2 includes an address-based network address translation module.

1           19.     The system of claim 18 wherein the network address translation module  
2 interfaces with the home-networked client devices and the host system to route  
3 communications between the host system to the home-networked client devices by  
4 translating the independent Internet addresses assigned by the host system to the home-  
5 networked client devices and local addresses belonging to the home-networked client devices  
6 that are used on the network between the home gateway device and the home-networked  
7 client devices.

1           20.     The system of claim 19 wherein the multiple home-networked client devices  
2 are recognized by the host system as independent client devices through the use of unique  
3 identifiers.

1           21.     A method for connecting multiple home-networked client devices to a host  
2 system, wherein the host system assigns independent Internet addresses to the home-  
3 networked client devices, the method comprising:

4                 using the home gateway device to receive a request from at least one home-  
5 networked client device to communicate with the host system, wherein the home-networked  
6 client device is connected to the home gateway device via a network;

7                 using the home gateway device to establish communications with the host system  
8 over a single communication tunnel;

9                 using the home gateway device to establish an individual communication session with  
10 the host system over the single communication tunnel, wherein the individual communication  
11 session is based on an independent Internet address assigned to the home-networked client  
12 device that requested to communicate with the host system; and

13                 using the home gateway device to process communications between the home-  
14 networked client device and the host system by mapping the independent Internet address  
15 assigned by the host system for the home-networked client device to a local address used  
16 between the home gateway device and the home-networked client device.

1           22.    The method of claim 21 further comprising physically locating the home  
2 gateway device in a personal residence such that the request is received in the personal  
3 residence.

1           23.    The method of claim 22 wherein the personal residence is a single family  
2 dwelling such that the request is received in the single family dwelling.

1           24.    The method of claim 21 further comprising physically locating the home  
2 gateway device and the home-networked client devices in a personal residence such that the  
3 request is received in the personal residence.

1           25.    The method of claim 24 wherein the personal residence is a single family  
2 dwelling such that the request is received in the single family dwelling.

1           26.    The method of claim 21 further comprising:  
2            using the home gateway device to establish with the host system multiple  
3 simultaneous individual communication sessions over the single communication tunnel,  
4 wherein the multiple simultaneous individual communication sessions are each based on an  
5 independent Internet address assigned to the home-networked client devices that request to  
6 communicate with the host system; and  
7            using the home gateway device to process communications between the home-  
8 networked client devices and the host system.

1           27.    The method of claim 21 wherein the host system includes an Internet Service  
2 Provider.

1           28.    The method of claim 21 wherein using the home gateway device to process  
2 communications between the home-networked client device and the host system includes:  
3            using the home gateway device to communicate with the home-networked client  
4 device using a first protocol; and  
5            using the home gateway device to communicate with the host system using a second  
6 protocol.

1           29.    The method of claim 28 wherein the first protocol and the second protocol are  
2   the same.

1           30.    The method of claim 28 wherein the second protocol differs from the first  
2   protocol.

1           31.    The method of claim 28 wherein the first protocol includes TCP/IP and the  
2   second protocol includes L2TP.

1           32.    The method of claim 21 wherein using the home gateway device to process  
2   communications between the home-networked client device and the host system includes:  
3       removing a first header including the local address from the communications received  
4       from the home-networked client device destined for the host system;  
5       adding a second header including the independent Internet address to the  
6       communications; and  
7       sending the communications with the second header to the host system.

1           33.    The method of claim 32 wherein using the home gateway device to process  
2   communications between the home-networked client device and the host system includes:  
3       removing a third header including the independent Internet address from the  
4       communications received from the host system destined for the home-networked client  
5       device;  
6       adding a fourth header including the local address; and  
7       sending the communications with the fourth header to the home-networked client  
8   device.

1           34.     A method for connecting multiple home-networked client devices to a host  
2 system, wherein the host system assigns independent Internet addresses to the home-  
3 networked client devices, the method comprising:  
4           using the host system to receive a request for an individual communication session  
5 with a home-networked client device;  
6           using the host system to establish communications with the home gateway device  
7 over a single communication tunnel;  
8           using the host system to establish with the home gateway device the individual  
9 communication session over the single communication tunnel, wherein establishing the  
10 individual communication session includes assigning an independent Internet address to the  
11 home-networked client device that requested to communicate with the host system; and  
12           communicating between the host system and the home-networked client device  
13 through the home gateway device over the individual communication session, wherein the  
14 independent Internet address is mapped to a local address.

1           35.     The method of claim 34 further comprising physically locating the home  
2 gateway device in a personal residence such that the request is received in the personal  
3 residence.

1           36.     The method of claim 35 wherein the personal residence is a single family  
2 dwelling such that the request is received in the single family dwelling.

1           37.     The method of claim 34 further comprising physically locating the home  
2 gateway device and the home-networked client devices in a personal residence such that the  
3 request is received in the personal residence.

1           38.     The method of claim 37 wherein the personal residence is a single family  
2 dwelling such that the request is received in the single family dwelling.

1           39.     The method of claim 34 further comprising:  
2           using the host system to establish multiple simultaneous individual communication  
3 sessions with the home gateway device over the single communication tunnel, wherein  
4 establishing the multiple simultaneous individual communication sessions includes assigning  
5 an independent Internet address to each home-networked client device that requests to  
6 communicate with the host system; and  
7           communicating between the host system and the home-networked client devices  
8 through the home gateway device over the multiple simultaneous individual communication  
9 sessions, wherein each independent Internet address is mapped to a local address assigned to  
10 each home-networked client device.

1           40.     The method as in claim 39 further comprising having the host system use the  
2 assigned independent Internet address to communicate individual information maintained by  
3 the host system to the home-networked client devices.

1           41.     The method as in claim 40 wherein the individual information includes host-  
2 based parental controls.

1           42.     The method as in claim 40 wherein the individual information includes wallet  
2 information.

1           43.     The method as in claim 40 wherein the individual information includes  
2 calendar information.

1           44.     The method as in claim 40 wherein the individual information includes  
2 personalized web page information.

1           45.     The method of claim 34 wherein the host system includes an Internet Service  
2 Provider.